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10/613,369

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Karim-Thomas Taghizadeh-Kaschani

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LERNER GREENBERG STEMER LLP
P O BOX 2480
HOLLYWOOD, FL 33022-2480

EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT

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2611

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/613,369

Applicant(s)

TAGHIZADEH-KASCHANI, KARIM-THOMAS

Examiner

Lawrence B. Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-14 and 22 is/are rejected.
- 7) ☒ Claim(s) 11, 15-21, 23-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7, 9-10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, Haigh et al (US Patent 6,262,200 B1) in view of Gable et al. (US Patent 4,234,952).

(1) With regard to claim 1, Haigh et al. discloses in Fig. 2, a method for transmitting information contained in a transmission signal via at least one channel, the method which comprises the following steps, to be performed at a transmitter end: generating at least one pulse sequence with at least one pulse as predetermined by the transmission signal; outputting the pulse sequence to the at least one channel (col. 2, line 59-col. 3, line 2, Haigh et al. teaches a pulse (A, C) generated as a result of the transmission signal's low to high (30) transition and a pulse (B, D) generated as a result of the transmission signal's high to low (32).

Haigh et al. does not disclose monitoring the channel for a presence of an interference signal; and repeating the pulse sequence if an interference signal is detected on the channel.

However, Gable et al. teaches a method of conflict resolution by retransmission wherein he teaches monitoring a channel for a presence of an interference signal (col. 3, lines 54-57); and repeating the transmission if an interference signal is detected on the channel (col. 4, lines 3-33). Though Gable et al. teaches the interference detection and retransmission in a shared medium, one of ordinary skill in the art would have been motivated to incorporate the teachings since the teachings solve the same problem of applicant, which is to detect interference on the channel and retransmit the signal if interference is detected to insure that the original information signal is received correctly.

(2) With regard to claim 2, claim 2 inherits all limitations of claim 1 above. As noted above the combination of Haigh et al. in combination with Gable et al. disclose all limitations of claim 1. Furthermore, Haigh et al. also discloses in Fig. 2, the method according to claim 1, which comprises: generating a first pulse sequence comprising at least one pulse as predetermined by the transmission signal (30) and transmitting the first pulse sequence via a first channel(A); generating a second pulse sequence comprising at least one pulse (32) with a time offset relative to the first pulse sequence and transmitting the second pulse sequence via a second channel (B).

Haigh et al. does not teach if an interference signal is detected on the first channel, retransmitting the first pulse sequence; and if an interference signal is detected on the second channel, retransmitting the second pulse sequence.

However, Gable et al. teaches a method of conflict resolution by retransmission wherein he teaches monitoring a channel for a presence of an interference signal (col. 3, lines 54-57); and repeating the transmission if an interference signal is detected on the channel (col. 4, lines 3-33).

One of ordinary skill in the art would have been motivated to apply the teachings of Gable et al. to the first and second channels to detect interference on the channels and retransmit the signal if interference is detected to insure that the original information signal is received correctly.

(3) With regard to claim 3, Gable et al. also discloses the method according to claim 1, which comprises, upon detecting an interference signal, transmitting the at least one pulse sequence only after no further interference signal is detected (col. 4, line 65-col. 5, line 8).

One of ordinary skill in the art would have been motivated to apply the teachings of Gable et al. insure that the original information signal is received correctly and to reduce unnecessary retransmissions.

(4) With regard to claim 4, Gable et al. also discloses the method according to claim 1, which comprises, if an interference signal is detected prior to a first transmission of the pulse sequence, holding off transmitting the pulse sequence until after no further interference signal is detected. Gable teaches the detecting interference while attempting to transmit (prior to a first transmission) and the transceiver retries transmission after a delay (without detecting a busy signal/ interference).

One of ordinary skill in the art would have been motivated to apply the teachings of Gable et al. insure that the original information signal is received correctly and to reduce unnecessary retransmissions.

(5) With regard to claim 5, Haigh et al. also discloses the method according to claim 1, wherein the transmission signal is a bivalent signal having a first signal level or a second signal level, and the at least one pulse sequence comprises a pulse produced after a change in the signal level (col. 2, line 59-col. 3, line 2).

(6) With regard to claim 7, claim 7 inherits all limitations of claim 5. As noted above, the combination of Haigh et al. in combination with Gable et al. disclose all limitations of claim 5. Furthermore, Haigh et al. also discloses in Fig. 2, the method according to claim 5, which comprises: when the signal level of the transmission signal changes from the first signal level to the second signal level (30), generating the first pulse sequence with at least one pulse and transmitting the first pulse sequence via the first channel (A, C); and when the signal level of the transmission signal changes from the second signal level to the first signal level (32), generating the second pulse sequence with at least one pulse and transmitting the second pulse sequence via the second channel (B, D).

(7) With regard to claim 9, though not explicitly disclosed, the invention of Haigh et al. would inherently produce the pulse sequence dependence upon a plurality of transmission signals since Haigh et al. teaches the device for transmitting status or control **signals** across an isolation barrier.

(8) With regard to claim 10, Gable et al. also discloses in Fig. 5(a), the method according to claim 1, which comprises monitoring the channel with a sensor (23a) disposed adjacent the channel.

One of ordinary skill in the art would have been motivated to apply the teachings of Gable et al. insure that the original information signal is received correctly and to reduce unnecessary retransmissions.

(9) With regard to claim 12, Haigh et al. also discloses in Fig. 1, the method according to claim 1, wherein the transmitting step comprises transmitting the transmission signal via a channel containing a potential barrier (20).

(10) With regard to claim 13, Haigh et al. also discloses the method according to claim 1, wherein the transmitting step comprises transmitting the transmission signal via a channel containing a magnetic coupling element forming a potential barrier (col. 1, lines 14-16; col. 3, lines 16-19).

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, Haigh et al. (US Patent 6,262,200 B1) in combination with Gable et al. (US Patent 4,234,952) as applied to claim 5 above, and further in view of Brown et al. (US Patent 4,027,152).

Claim 6 inherits all limitations of claim 5 above. As noted above the combination of Haigh et al. disclose all limitations of claim 5. They do not teach the method according to claim 5, wherein a change in the signal level of the transmission signal from the first signal level to the second signal level involves a positive pulse of the pulse sequence with respect to a reference potential, and a change in the signal level of the transmission signal from the second signal level to the first signal level involves a negative pulse of the pulse sequence with respect to the reference potential.

However, Brown et al. teaches in Fig. 2, a method and apparatus for transmitting binary-coded information wherein a change in the signal level of the transmission signal from the first signal level to the second signal level involves a positive pulse of the pulse sequence with respect to a reference potential, and a change in the signal level of the transmission signal from the second signal level to the first signal level involves a negative pulse of the pulse sequence with respect to the reference potential (col. 1, lines 25-46).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Brown et al. for an efficient use of bandwidth and allowing the transmission of pulse trains with continuous variable frequencies (col. 1, lines 48-54).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, Haigh et al. (US Patent 6,262,200 B1) in combination with Gable et al. (US Patent 4,234,952) as applied to claim 1 above, and further in view of Brown et al. (US Patent 4,027,152).

Claim 8 inherits all limitations of claim 1 above. As noted above the combination of Haigh et al. and Gable et al. disclose all limitations of claim 1. Furthermore, Haigh et al. also discloses the method according to claim 1, wherein the transmission signal has a first signal level (low) or a second signal level (high), and the method comprises: when the signal level of the transmission signal changes from the first signal level to the second signal level, generating a first pulse sequence with a plurality of pulses (A, C); when the signal level of the transmission signal changes from the second signal level to the first signal level, generating a second pulse

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sequence having a plurality of pulses and differing from the first pulse sequence (B, D), (col. 2, line 59-col. 3, line 2).

Neither Haigh et al. nor Gable et al. disclose commonly transmitting the first and second pulse sequences via a common channel.

However, Brown et al. teaches in Fig(s) 1, 2, wherein the transmission signal (22) has a first signal level or a second signal level, and the method comprises: when the signal level of the transmission signal changes from the first signal level to the second signal level, generating a first pulse sequence with a plurality of pulses (26, 28); when the signal level of the transmission signal changes from the second signal level to the first signal level, generating a second pulse sequence having a plurality of pulses (30, 32) and differing from the first pulse sequence and commonly transmitting the first and second pulse sequences via a common channel (16).

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Brown et al. for an efficient use of bandwidth and allowing the transmission of pulse trains with continuous variable frequencies (col. 1, lines 48-54).

6. Claims 14, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art, Haigh et al (US Patent 6,262,200 B1) in view of Gable et al. (US Patent 4,234,952).

(1) With regard to claim 14, Haigh et al. discloses in Fig(s). 3, 3A, a transmission apparatus, comprising: an input terminal (62) for receiving at least one transmission signal (Fig. 3a, 62), and at least one output terminal (52) to be coupled to a transmission channel; at least one pulse-generating circuit (40) connected between said input terminal and said output terminal,

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said pulse-generating circuit having at least one actuating input (NAND gate input supplied from node 62) and generating a pulse sequence with at least one pulse as predetermined by the transmission signal (col. 3, lines 19-28).

Haigh et al. does not teach an interference signal detection circuit connected to said pulse-generating circuit, said interference signal detection circuit providing an actuating signal causing the pulse-generating circuit to generate the pulse sequence again as stipulated by the actuating signal.

However, Gable et al. teaches in Fig. 5a, an interference signal detection circuit (23a) connected to a transmission control circuit, said interference signal detection circuit providing an actuating signal (13) causing the transmission circuit to generate the transmission signal again as stipulated by the actuating signal (col. 4, lines 3-33).

Though Gable et al. teaches the interference detection and retransmission in a shared medium, one of ordinary skill in the art would have been motivated to incorporate the teachings since the teachings solve the same problem of applicant which is to detect interference on the channel and retransmit the signal if interference is detected to insure that the original information signal is received correctly.

(2) With regard to claim 22, Haigh et al. also discloses in Fig. 2, 3, the transmission apparatus according to claim 14, wherein said at least one pulse-generating circuit (40) is configured to generate the pulse sequence after a prescribed edge of the input signal (col. 3, lines 59-64).

Allowable Subject Matter

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7. Claims 11, 15-21, 23-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Ratchford et al. discloses in US 4,633,473 Fault Tolerant Communications Interface.

b.) Bonvallet et al. discloses in US Patent 5,450,611 Fast Channel Access Protocol For A Two-Way Communication System.

c.) Haigh et al. discloses in US Patent 5,952,849 Logic Isolator With High Transient Immunity.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ghayour Mohammad can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams



lbw

July 20, 2007



MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER